PyDAP

OpenDAP client and server in Python

Thanks and Credits:

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Dec 7, 2007

OpenDAP: The Data Access Protocol

- You all know OpenDAP better than me!
- OPeNDAP: Open-source Project for a Network Data Access Protocol
- Expose a dataset over the network, in a self-describing way:
  - http://server/dataset: base URL
  - http://server/dataset.dds: structure
  - http://server/dataset.das:attributes
  - http://server/dataset.dods: actual data

PyDAP 2.x

- Pure Python, from scratch, written by Rob de Almeida based on DAP 2.0 spec draft.
- Developed as Google Summer of Code 2005 project.
- Contains its own XDR library.
- Server based on WSGI specification (common web services standard).
- Fully buffered server, handles infinite datasets.
- Approx. 3k LOC for client and server.

Our simple Yahoo CSV data from this morning

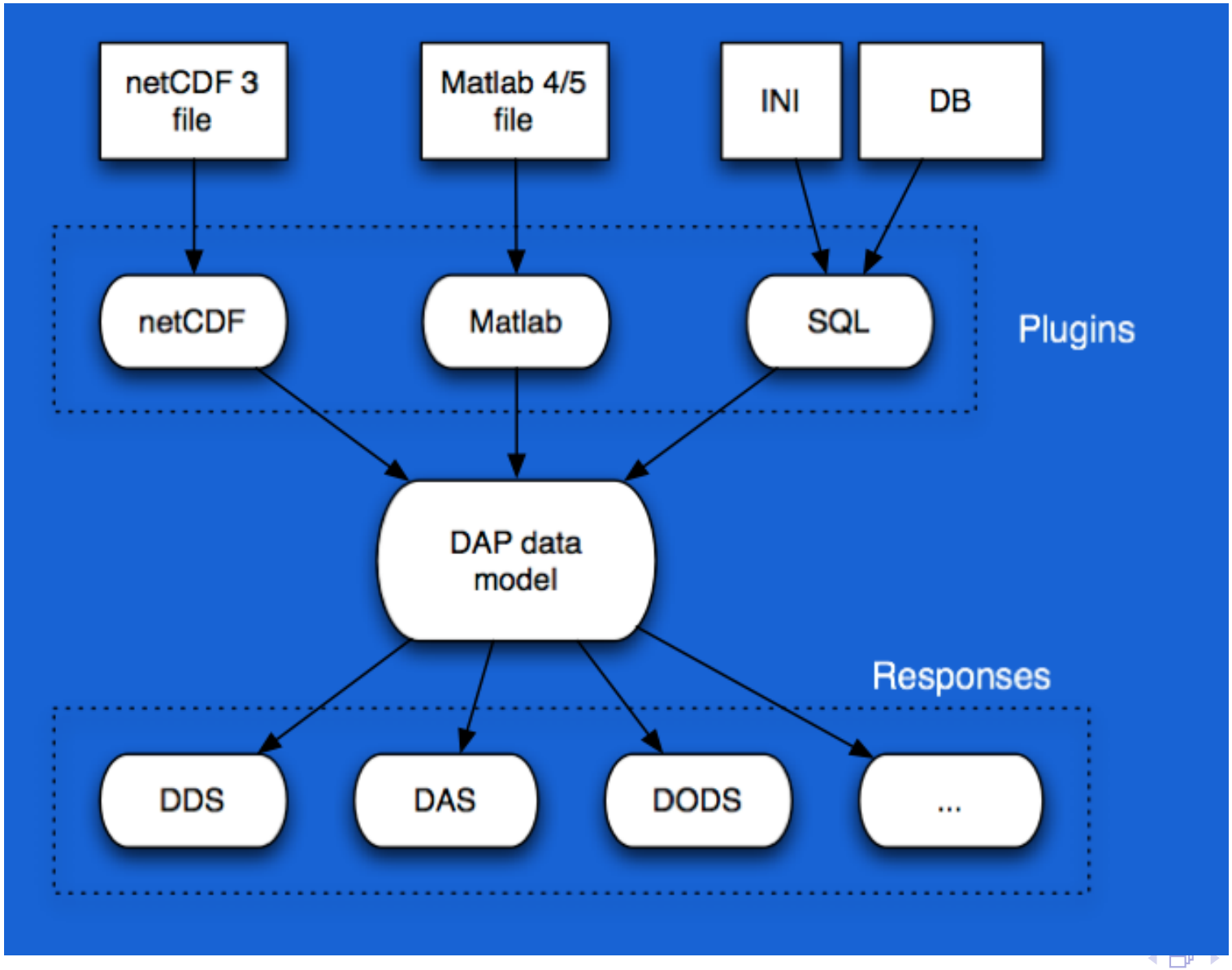
http://127.0.0.1:8080/sample.csv.dds

```
Dataset {
    Sequence {
        String date;
        Int32 open;
        Float64 high;
        Float64 low;
        Float64 close;
        Int32 volume;
        Float64 adj_close;
    } sample;
} sample%2Ecsv;
```

PyDAP Client and Server

- Pure Python implementation
- Can be used interactively to explore a dataset (demo later)
- Available via `setuptools`:
  - `easy_install dap`
  - `easy_install "dap[server]"`
  - `easy_install dap.plugins.netcdf dap.responses.wms dap.responses.html`

Plugins and responses: a modular architecture



Plugins
Convert data from any format to PyDAP types

Already available:

- netCDF
- CSV
- Matlab 4/5
- HDF5
- GrADS grib
- GDAL,
- DB API 2 (SQL)
- grib2

Can be written in pure python and added by the user for exposing local data types.

Responses

Return views of the data according to the requests of the user.

- `dds`, `das`, `dods`: 'standard'
- ASCII for human consumption (`ascii`)
- HTML, with auto-generated forms (`html`)
- JSON (`json`): lightweight alternative to XML for data exchange
  - JSON is valid Python code (dictionary)!
- WMS/Google Earth (`kml`)
- EditGrid/Google Spreadsheets